

In the Application of  
Hoeffler et al.  
Application Serial No.: 09/245,615  
Filed: February 4, 1999  
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Attorney Docket No.: INVI1100-1

## II. REMARKS

Claims 31, 32, 37, 54, 60, and 63 have been amended and claims 66-73 have been added. These amendments are fully supported by the application and claims as filed and do not introduce new matter. Upon entry of the present amendment, claims 31 to 37, 39, 40, 51, 52, 54-56, and 58-73 will be pending.

### A. Regarding the Amendments

Claim 31 has been amended such that it no longer specifies that the microarray comprises uncharacterized antibodies. The claim now recites that the microarray comprises a plurality of antibodies, and that the kit further includes a reagent for labeling a cell lysate. The amendment is supported, for example, at least in Example VII, on page 46 of the application as filed, which describes labeling a cell lysate and hybridizing the labeled cell lysate to a microarray that comprises a plurality of antibodies.

Claim 32 has been amended to recite a kit that further comprises instructions for comparing protein expression in two or more populations of cells or for characterizing a cell based on its protein expression pattern. The amendment is supported by original claim 32 and, for example, at page 29, lines 7-9 and page 30, lines 11-14.

Claim 37 has been amended to remove the term “uncharacterized” and to include the phrase “wherein the antigen specificity of the antibodies is unknown”. The use of antibodies for which the antigen specificity is unknown is supported throughout the specification, for example, on page 3, where the specification reads “Methods are needed to simply and rapidly screen very large numbers of uncharacterized antibodies for those specific for a given antigen”, and on page 4 of the application, lines 4-11, which states:

In one aspect of the invention the methods are used to identify and characterize antibodies having binding affinity for a specific target antigen. The method comprises contacting an array of

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uncharacterized antibodies bound to a solid surface with at least one target antigen and identifying the antibodies to which the target antigen binds.

Claim 54, which depends from claim 31, has been amended such that the language corresponds to claim 31. Claims 60 and 63 have been amended to correct the grammar.

New claims 66 to 73 have been added. New claim 66 is supported at least in Example VII of the application, which discloses an array that comprises antibodies recognizing FOS, PLC-gamma, VDGF, and CREB. Claims 67 and 68, drawn to more than one reagent and two labeling reagents, finds support at least on page 40, lines 7-11 and in Table I of the application as filed (specifying reagents labeled with Cy-3 and Cy5), and in originally filed claim 24. Claim 69, drawn to two microarrays comprising antibodies, finds support at least on page 30, lines 1-3, which provides two microarrays that can be reacted with lysates, and in Example II, page 40 lines 7-11.

New claim 70, drawn to a microarray that comprises a plurality of antibodies reactive against proteins of a first species is supported by the application at least on page 29, lines 9-14, and in Example VII. Claim 71, reciting a microarray comprising antibodies to mammalian proteins, also finds support in Example VII. New claims 72 and 73 are drawn to the subject matter of previously presented claims 63 and 64. Support for claims 72 and 73 is found on page 15, lines 8-11.

## **B. Regarding the Drawings**

Applicants thank the Examiner for allowing for deferral of the correction of the drawings until allowable subject matter has been established.

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**C. Rejections under 35 U.S.C. § 112**

The rejections of claims 31 to 37, 39-40 and 51-52, 54-56, and 58-65 under 35 U.S.C. §112, second paragraph, as allegedly vague and indefinite, are respectfully traversed.

Independent claim 31 has been amended to remove the term “uncharacterized”. Thus the rejection of claim 31 and dependent claims 32-36, 51, 52, 54, and 60-62 is rendered moot. Applicants therefore respectfully request that the rejection of the these claims under 35 U.S.C. §112, second paragraph be removed.

Applicants have amended claim 37 to remove the term “uncharacterized”. The claim now recites: “wherein the antigen specificity of the plurality of antibodies is unknown”.

Applicants assert that claim 37 as amended is definite, and therefore respectfully requested that the rejection of independent claim 37 and dependent claims 39, 40, 55, 56, 58, 59, and 63-65 be removed.

**D. Prior Art Rejections**

The rejection of claims 37, 55, 56, 59, 63, and 64 under 35 U.S.C. §103(a) as allegedly obvious over Shalon in view of Stevenson et al. is respectfully traversed.

Applicants disagree that Stevenson et al. disclose the use of antibodies of unknown antigen specificity. Applicants have amended claim 37 to recite a microarray comprising a plurality of antibodies “wherein the antigen specificity of the plurality of antibodies is unknown”. Stevenson uses antibodies that are known to bind collagen IV in ELISA assays. These antibodies are therefore “characterized” in that their antigen specificity is known. Shalon also lacks disclosure of antibodies of unknown antigen specificity. Thus, the references do not disclose each and every element of claim 37, and of claims 55, 56, 59, 63, and 64 which depend from claim 37. Applicants therefore respectfully request that the rejection be removed.

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Claims 39-40 stand rejected under 35 U.S.C. §103(a) as allegedly obvious over Shalon in view of Stevenson et al. and further in view of Ragg and Whitlow. This rejection is respectfully traversed.

As stated immediately above, Stevenson et al. does not disclose antibodies of unknown antigen specificity. Shalon and Ragg and Whitlow do not make up for the deficiency of Stevenson. Thus, Shalon, Stevenson et al., and Ragg and Whitlow do not, either alone or in combination, disclose each and every element of claims 39 and 40. Applicants therefore respectfully request that the rejection of claims 39 and 40 under 35 U.S.C. §103(a) be removed.

The rejection of claim 65 under 35 U.S.C. §103(a) is also traversed. Neither Shalon et al., Stevenson et al., nor Kohler et al. disclose the use of antibodies of unknown antigen specificity. Thus, the requirements of a rejection under 35 U.S.C. §103(a) are not met, and Applicants respectfully request that the rejection be removed.

Claims 31-33, 36, 51, 52, 54, 60, and 61 have been rejected under 35 U.S.C. §103(a) as allegedly unpatentable over Shalon et al. in view of Stevenson et al. and further in view of Foster et al. Applicants respectfully traverse this rejection.

Claim 31 has been amended to remove the term “uncharacterized”. The claim amendment has also removed “instructions for use” and now recites a first reagent for labeling a cell lysate. Neither Shalon et al., nor Stevenson et al., nor Foster et al. disclose a reagent for labeling a cell lysate. Thus, the references do not teach each and every element of claim 31 and claims 32, 33, 36, 51, 52, 54, 60, and 61 that depend from claim 31. Applicants therefore respectfully request that the rejection of these claims under 35 U.S.C. §103(a) be removed.

Claims 34 and 35 have been rejected under 35 U.S.C. §103(a) as allegedly unpatentable over Shalon et al., in view of Stevenson et al., further in view of Foster et al., and further in view of Ragg and Whitlow. Applicants respectfully traverse this rejection.

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As set forth above, amended claim 31 now recites "a first reagent for labeling a cell lysate". Neither Shalon et al., nor Stevenson et al., nor Foster et al., nor Ragg and Whitlow disclose a reagent for labeling a cell lysate. Thus, the references do not teach each and every element of dependent claims 34 and 35 which incorporate the language of claim 31. Applicants therefore respectfully request that the rejection of claims 34 and 35 under 35 U.S.C. §103(a) be removed.

Claim 62 has been rejected under 35 U.S.C. §103(a) as allegedly unpatentable over Shalon et al., in view of Stevenson et al., further in view of Foster et al., and further in view of Kohler et al. Applicants respectfully traverse this rejection.

As set forth above, amended claim 31 now recites "a first reagent for labeling a cell lysate". Neither Shalon et al., nor Stevenson et al., nor Foster et al., nor Ragg and Whitlow disclose a reagent for labeling a cell lysate. Thus, the references do not teach each and every element of dependent claim 62 which incorporates the language of claim 31. Applicants therefore respectfully request that the rejection of claim 62 under 35 U.S.C. §103(a) be removed.

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**Conclusion**

In view of the amendments and the above remarks, it is submitted that the claims are in condition for allowance, and a notice to that effect is respectfully requested. The Examiner is invited to contact Applicants' undersigned representative if there are any questions relating to this case.

Check No. 579629 in the amount of \$2360.00 is enclosed for the RCE fee, and for the Petition for Extension of Time – 3 Months fee. The Commissioner is hereby authorized to charge any additional fees, or make any credits, to Deposit Account No. 07-1896.

Respectfully submitted,



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